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Report of work done by the Industries and Commerce Committee during the year 1913-14.

Mr. M. Kantaraj Urs, continued to be Chairman of the Committee during the year. Exclusive of the Chairman there are 11 Members of the Committee + of whom are members of the Conference. The Committee met 9 times during the 10 months and the average attendance was 69.70 per cent.

Sub-Committees.

The following Sub-Committees were formed for the consideration of some of the subjects referred to the Committee by the Conference.

- 1. Sub-Committee for the improvement of old industries.
- 2. Do manufacture of cotton seed oil.
- 3. Do investigation of wood distillation.
- 4. Do consideration of statistical publications.
- 5. Do opening up of Mysore feeder railways.
- 6. Do for books to be purchased for the library.
- 7. Do Mysore Arts and Crafts Institute.

The work of the Sub-Committees is dealt with in the report of work done under the subjects entrusted to their care.

Staff.

Mr. C. Ranganatha Rao Sahib continued to be the Secretary of the Committee. Mr. Y. Narasinga Rao has been appointed as a special officer under the Committee to investigate application for Takavi loans for industrial purposes and also to encourage the establishment of joint-stock undertakings.

Dasara Exhibition.

The management of the Mysore Dasara Industrial and Agricultural Exhibition has been transferred to this Committee assisted by three Representatives from the Agricultural Committee and two from the Education Committee. The prospectus for the next exhibition has recently been issued.

It is proposed to subdivide the report of work done under three heads as follows:

- 1. Schemes under operation, which include all schemes in which investigation by the Committee is completed and which may therefore be expected to lead to practical results early.
- 2. Schemes under investigation.
- 3. Collection and spreading of information.

Schemes under operation.

I. The Manufacture of Cotton Seed Oil.

A Sub-Committee was appointed to consider this question, and a note was prepared by the Secretary giving an estimate of the quantity of cotton seeds available annually at Davangere. During the visit of the Dewan to Davangere last August some of the leading merchants of the place were advised to float a company for the manufacture of food products from cotton seed. At the instance of the Committee, the Government deputed the Director of Industries and Commerce to visit the factory belonging to the Cotton Oil Company at Naosari and to study the problems connected with this industry, which is but newly introduced into India, and submit a report on the prospects of its being successfully established in the Mysore State. On his return from Naosari, Mr. Chatterton reported that the prospects of the successful introduction of this industry at Davangere were very favourable, the main advantages being that all the cotton seed required was available on the spot at prices much below what the mill at Naosari had to pay, and that a local market for the products from

cotton seed was being created in Bangalore. About 6 tons of oil are imported into Bangalore every month and the Military Diary Farm are getting 60 tons of meal and 300 tons of cotton hulls from Naosari per annum. Mr. Chatterton considered that a company with a paid up capital of 3 lakhs might at first be started so as to be able to crush about 6,000 tons of seed per annum. recommendation submitted by the Committee, the Government promised to subscribe Rs. 50,000 worth of shares if a properly supported company should raise the balance of the capital from the general public. The information collected about the industry was placed before the leading citizens of Bangalore at a meeting held at "Ringwood" on the 23rd December 1913 at which it was decided that a company should be floated for the manufacture of cotton seed oil. An influential Directorate was appointed and the company has recently been registered. The Bank of Mysore has undertaken to float the company on a guarantee that their out-of-pocket expenses up to a limit of Rs. 1,500 would be paid by Government in case the company is not successfully floated. At the request of the company a Director has also been appointed by Government. A note has recently been written by the Secretary on "Cotton Seed Products" giving information regarding the edible value of the food products manufactured from cotton seed and the prospects of establishing the cotton seed oil industry in the State.

II. Pharmaceutical Preparations.

The application of Dr. Moore and Mr. Pell for certain concessions to enable them to start pharmaceutical works in Mysore and the recommendations made by the Committee thereon to Government are noted in the report for last year. Government in their order No. G. 4508—12 G.M. 67-13-132 dated the 15th December 1913 sanctioned the grant of the following concessions:—

- (1) The alcohol required for manufacture will be supplied to the company from the Government Distillery at the cost price of manufacture.
- (2) The manufacture of pharmaceutical preparations containing alcohol so supplied will be carried on under bond, the company defraying the expenses incurred by Government for suitable watch and ward in the interests of the Excise Revenue.
- (3) All such preparations containing alcohol sold in the State will be liable to a payment of half the usual duty for a period of 5 years, full duty being levied thereafter, provided that such preparations do not compete with intoxicating liquors manufactured and sold by the Excise Department.
- (4) All such preparations containing alcohol will be allowed to be exported to British India or other place outside Mysore free of payment of any duty to the State, provided that full duty shall be payable if no duty is levied in British India or other place of export.
- (5) Government will grant a site for the factory in a locality approved by Government at a reasonable price if the land belongs to Government or at the actual cost of acquisition if private land has to be acquired for the purpose, and such site will not be liable to any Government tax or assessment for a period of 20 years or any shorter time during which the site is used for these works.
- (6) Government will also after the factory is started and is in working order be prepared to grant land on suitable terms for the purpose of experimental growing of medicinal plants, etc.

It was directed that the concessions granted were subject to the conditions that half the subscribed capital (5,00,000) is continuously held by the subjects of the Mysore State including the residents of Civil and Military Station, that the company agreed to train in all processes of manufacture apprentices not exceeding six at a time selected in consultation with the company and the company deposited a sum of Rs. 5,000 in the Mysore Bank as a guarantee of good faith.

The initial deposit of Rs. 5,000 had been made and the applicants are awaiting the grant of a site for commencing building operations.

Arrangements are being made for the issue of the necessary prospectus and Mr. Pell has written to say that he hopes to be able to start work at the beginning of November this year.

III. Wood Distillation.

The Sub-Committee appointed to investigate the question of wood distillation considered a preliminary note on the subject prepared by Mr. Chatterton. He was of opinion that wood distillation was of primary importance to the industrial development of the State being the only means whereby cheap fuel can be obtained for the generation of power in Mysore. But the industry cannot be established as there is no market for the products turned out. The smallest wood distillation plant cost about Rs. 2,00,000 and produced about 1,400 tons of charcoal per annum. There was no

demand for this quantity of charcoal. It was therefore necessary to create a demand for charcoal before the installation of a plant for the distillation of wood. This could easily be done if a supply of charcoal at reasonable rates was guaranteed to all power users so as to enable them to set up suction gas plants. Mr. Chatterton considered that with charcoal at Rs. 30 a ton, power could be more cheaply created from a suction gas plant than by means of an ordinary oil engine using liquid fuel. He stated that charcoal could be manufactured in the forests at a cost of Rs. 20 a ton and an additional sum of Rs. 10 would sufficiently provide for the cost of conveying the fuel to power users. This argument has been further elaborated in a paper since published as a bulletin on the "Generation of Power" read under the auspices of the Mysore Education Association. The Sub-Committee passed the following resolutions:—

- (1) That wood distillation can only be undertaken when there is a market for charcoal.
- (2) That a market for charcoal can only be created by an assured supply being guaranteed to persons who instal suction gas plants for the driving of factories, mills, pumps, etc.
- (3) That Government be recommended to guarantee to users of suction gas plants, a supply of charcoal at a fixed price at any railway station convenient to the power user, such supply being undertaken by the Forest Department who might employ suitable contractors.
- (4) That the Conservator of Forests be asked to state as early as possible whether he can accept the figures for charcoal given in Mr. Chatterton's letter or at what other figures he can undertake the supply.

The Committee adopted the recommendations of the Sub-Committee and it was decided that Government be recommended to recognise the principle of the Director of Industries and Commerce guaranteeing the supply of charcoal to all persons who set up suction gas plants under his advice and that the Conservator of Forests be requested to report at an early date the price at which he could supply charcoal to the public. Once a market for charcoal is created, the installation of a wood distillation plant may be undertaken with some guarantee of obtaining an adequate financial return on the capital invested.

IV. Aloe fibre Industry.

After inspecting an aloe fibre plantation at Fraserpet in Coorg, the Director of Industries submitted a note for the consideration of the Committee regarding the financial results that may be anticipated if a sisal hemp plantation is started in Mysore. He considered that the results obtained at Fraserpet justified measures on behalf of Government to induce private enterprise to start an aloe plantation. The note has been published as a bulletin and is made available to the public. The Committee after a careful consideration of the note came to the conclusion that the industry held out a fair promise of becoming a financial success and deserved some concessions on the part of Government to enable a company to be floated. They accordingly submitted the following recommendations to Government:—

- (1) Government should make a grant of suitable land if possible in one compact block, of 1,500 acres, free of upset price and also free of assessment for a period of 7 years with provision for payment of full assessment at dry rates thereafter;
- (2) Government should subscribe 1/5 of the paid up capital after the remaining + 5 have been taken up by the public.
- (3) The Company should be permitted to raise a lakh of rupees or whatever sum was required to equip the plantation with suitable machinery either by way of debentures or by increase of capital whichever was more profitable to the company after the growth of the plants permitted of their being worked for fibre.

The Committee did not agree with Mr. Chatterton that Government should be asked to pay interest at 5 per cent., per annum on the capital during the period the plants were immature, as they were of opinion that the initial capital raised may, if required, be of sufficient amount to provide for payment of interest, during the period.

V. Weaving.

• The action taken by the Committee towards the improvement of the weaving industry consisted mainly in the distribution of fly shuttle slays at half cost to all bona fide weavers who were anxious to adopt new methods of weaving and in encouraging the organisation of weaving demonstration parties with a view to bring home to the minds of the people the advantages of improved methods. 2+2 fly-shuttle slays have been distributed during the course of the current year at a cost of Rs. 639-4-0. The accompanying statement gives details as regards the places and number of slays supplied:

STATEMENT OF SLAYS SUPPLIED.

Place	To whom supplied	No.	R	ate	Am	ount		ebitable to mmitte	
Kommerahalli	Honorary Secretary, Panchama Co-operative Society		5	2 0	271	10	1.5	. 8	0
Malur	Amildar, Malur	32	5	2 0	164	0) 8	0 ; 0	0
Dodballapur	Superintendent, Industria School	20	5	2 0	102	8	5 5	0 0	 0.
Kankanahalli	Secretary, Weaver's Society	41	5	8 0	225	8) 11	2 12	0 15 slays to
Kothanahalli	Do. Do	40	, 5	8 0	220	0) 11	0 0	be sent
Melkote	Superintendent, Industria	6	5	8 0	3-8	o) 1	6 8	0 to be sent
Chickanayakanhall	i President, District Committee Tumkur		5	8 0	275	0) 13		0 20 to be sent
	. Total	242			1,201	10	63	9 4	o ;

The Hassan District Committee has started a weaving demonstration party under the superintendence of Mr. Sampath Iyengar and necessary facilities have been afforded to the Mysore District Committee to organise a similar party in that District.

At the instance of Mr. M. Chengiah Chetty the Committee have strongly recommended the Director of Industries and Commerce to provide for a larger number of weaving demonstration parties to popularise fly shuttle weaving than it has been possible to organise for the present. In a note giving an account of the work done, Mr. Chatterton stated that a demonstration party to be really effective should not only exhibit the working of a fly shuttle loom but also organise methods of business in the place. It was therefore necessary to locate a party at a particular place for at least one year. A demonstration party is working at Kommerahalli for the past one year, to which place three bales of yarn are sent every month for being woven into 300 saries according to specifications supplied from Bangalore. The Committee approved of Mr. Chatterton's proposal to provide for a dozen demonstration parties at a cost of Rs. 10,000 in the budget estimate of his department for the year 1914-15.

VI. Sandalwood Carving.

The Committee considered a note prepared by Mr. Chatterton on the action that may be taken to encourage the sandalwood carving industry in the State. He suggested that improvements will be effected if suitable wood is delivered to the gudigars, free of cost and a return to the traditional style of carving encouraged. The Committee were of opinion that a grant-in-aid of 2 tons of sandalwood may be made to the Arts and Crafts Institute which should arrange to distribute pieces wood of to the gudigars and get good carved work done. A recommendation to this effect has been submitted to Government. Suitable designs are being furnished to the gudigars by the Arts and Crafts Institute.

VII. Chromo-lithography.

The application of Mr. Shama Rao, Artist, for a loan of Rs. 15,000 to enable him to start Chromo-lithographic work was considered by the Committee. As the annual value of work of this description that could be undertaken by a litho press in Bangalore appeared to be considerable and Mr. Shama Rao was known to be a good artist, Government have been recommended to purchase the necessary machinery and allow Mr. Shama Rao to instal and work it under the supervision of the Superintendent of Government Press and the Director of Industries under a scheme that permits of his purchasing the plant, should he desire to do so, later on.

VIII. Motor Traction.

At the meeting of the Economic Conference at Mysore last year, the following resolution was passed: —"That in the opinion of this Conference, it may be possible to introduce motor traction service for passengers and goods on some of the important routes in the State and the Industries and Commerce Committee be requested to consider the subject and place their report on it before the

next session of the Conference, such report to include (a) particulars of routes on which such a service may prove remunerative, with traffic statistics, (b) particulars of vehicle service recommended and (c) mode of organising and financing."

Even before this resolution was commended to the attention of the Committee, a proposal to start motor service between Maddur and Kollegal made by Mr. Anandatirtha Rao was under their consideration. He offered to float a company with a capital of one lakh of rupees to undertake the service, provided the Government guaranteed interest at 5 per cent. per annum on the paid up capital of the company for a period of 5 years and permission was given him to deposit the share capital in the Government Treasuries. After a careful consideration of the estimated receipts and expenditure of the undertaking furnished by Mr. Anandatirtha Rao, the Committee came to the conclusion that the financial results of the venture were not such as to justify a guarantee of interest by Government.

The Director of Industries was requested to prepare a preliminary note on the subject of motor traction on the lines indicated by the Economic Conference. His note has recently been published as a bulletin of the Committee and made available to the general public. In substance he advocates that motor traction service should be regarded as a convenient prelude to railway communication. It should be started on routes that are likely to be served with railways later on, with a view to develop the traffic and reduce the period of working at a loss which the majority of railway undertakings have to face in their early years. It might be started as a Government undertaking, for a private company, unless backed with strong financial support, runs a considerable risk of failure. Government will also be able to manage the services on several routes concentrated under a single administration much more efficiently and cheaply than can be done by private enterprise. The Committee agreed with this view and have submitted a recommendation to Government that motor traction may be started on three routes, (1) Ansikere to Hassan, (2) Kadur to Chickmagalur and (3) Maddur to Kollegal, aggregating a distance of 100 miles at a cost of a lakh and a half of rupees.

IX. Railway Communication With the West Coast.

At the last meeting of the Economic Conference, the following resolution was passed:--

"That investigation be undertaken by the Industries and Commerce Committee to ascertain to what extent the foreign trade of the Mysore State suffers loss and is hampered for want of Railway connection with a convenient seaport on the west coast and in case such loss and disadvantage is considerable further investigations be undertaken as to the port selected, the gauge to be adopted and other particulars."

The Director of Industries has prepared a note giving information on the points required and this note as well as the aldress delivered by Dawan Bahadur J. S. Chakravarti before the Economic Conference on the subject has been printed as a bulletin. The Committee have recommended to Government that the construction of a railway from Arsikere to Mangalore may be undertaken at an early date and the metre gauge be adopted to avoid a break of gauge with the existing railway system.

X. Telegraph Communication.

The Committee have further recommended to Government a favourable consideration of their proposals to provide the more important stations in the State with telegraphic facilities in view of the fact that the Government of India have ordered a reduction in the amount of the guarantee of income required for opening an office. The reduction, as courteously worked out for the Committee by the Director of Telegraphs, Madras Circle, in the case of a telegraph office at Anekal, shows a decrease in the guarantee required by a sum of Rs. 112 per annum, the amount of Rs. 480 fixed according to the old rules being now reduced to Rs. 368. The Telegraph Department as before continues to bear half the loss in opening guaranteed combined offices. It is understood that Government have already taken action on the recommendation of the Committee.

XI. The Mysore Arts and Crafts Institute (Sales Depot).

Government having passed orders in their proceedings No. G. 3+37-41 G. M. 55-12-249 dated the 11th November 1913 approving of the suggestion of the Committee to open an Industrial Depot with a view to improve and create a market for the artistic work of the Mysore artisans, a sales depot was opened at St. Marks Road, Bangalore, in February last. Articles of the aggregate value of Rs. 10, 915-3-6 were transferred to the depot from the Oriental Library, Mysore and also the Museum. The gudigars of the Shimoga District were sent for and instructed as regards the

designs that should be adopted in future in their carvings. The grant-in-aid of 2 tons of sandal-wood recommended by the Committee is likely to place this industry on a more satisfactory basis. It has recently been decided to obtain and sell artware from similar depots outside the State with a view to encourage the sale of Mysore artware outside the State and also to furnish the local artisans with models for fresh kinds of work. Arrangements have been made to have articles sold for private parties on commission sale. The total value of such articles placed at the depot is Rs. 6,786-10-5 of which articles worth Rs. 1,876-10-4 have already been sold.

The total sales at the depot up to the 19th May 1914 have been Rs. 4,017-14-4.

XII. Other Industries.

The sugarcane crushing plant installed by the department of Industries at three places, Haravu, Kunigal and Mavatoor, last year, are believed to have satisfactorily solved all the preliminary difficulties that are met with in the beginning. The plant has been rendered so efficient as to reduce the working costs to about 2 annas per maund. The estimates, one for a large fixed plant with a capacity of 120 maunds of jaggery per day, and another for a movable plant turning out 40 maunds of jaggery per day have been obtained from the Director of Industries and furnished to some of the district committees. Mr. Chatterton has promised to write a note on the establishment of sugarcane plants as soon as he has accumulated sufficient data from the working of the installations during the current season, which, it is hoped, will give an impetus to the establishment of power driven plants for sugarcane crushing. As anticipated by the Committee the publication of the Takavi rules sanctioning the grant of loans on easy terms for the installation of power driven machinery has been taken advantage of for the installation of pumps worked by oil engines, the establishment of oil and rice mills, and the development of an existing tile factory at Sringeri. The following statement gives details regarding the amount of takkavi loans applied for and sanctioned during the year:

No. of applications received.	Hire-purchase 13 Loan +2	•••••	Total 55		Total
Total amount asked for:-	Hire-purchase Loan	Rs. 24,121-4-0 Rs. 197,441-0-0	•••••	Rs.	2,21,562-4-0
No. of applications sanctioned by the Director of Industries and Commerce:—	Hire-purchase 4 Loan 1	•••••	Total 5		
Amount:—	Hire-purchase Loan	Rs. 2,946-4-0 Rs. 1,000-0-0		Rs.	3,946-4-0
No. of applications sanctioned by the Government:	Hire-purchase 6 Loan 7	*****	Total 13		
Amount :	Hire-purchase Loan	Rs. 13,800-0-0 Rs. 40,750-0-0	•••••	Rs.	54,550-0-0
No. of applications pending sanction and enquiry:—	Hire-purchase () Loan 5		Total 5		
Amount: -	Hire-purchase Loan	Rs. (19,000-0-0	•••••	Rs.	19,000-0-0
No. of applications rejected or withdrawn:	Hire-purchase 3 Loan 29	•••••	Total 32		
Amount:	Hire-purchase Loan	Rs. 7,375-0-0 Rs. 1,36,691-0-0	••••	Rs.	1,44,066-0-0

Schemes under Preparation and Investigation.

1. The Tile Industry.

The recommendations that the Industries and Commerce Committee submitted to Government to attract capital to the development of the Tile Industry in the State before the last session of the conference are given in the report for last year. In their order No. G. 1929-33—G. M. 55-12-256 dated 28-8-1913 on these recommendations, Government considered that it was advisable to hand over the existing Government Tile Factory at Mysore to a private Syndicate to be worked on a tentative basis for a period of three years, so that the experience gained in working the present factory may be utilised for starting a large factory on modern lines later on Government expressed their willingness to hand over the machinery and buildings to the Syndicate free of rent for this period, on a deposit of 10 per cent. depreciation charges per annum, to be utilised for any repairs that may be necessary. The other concessions that were sanctioned were the permission to remove clay from Government beds free of royalty,

a supply of water at 8 annas per 1,000 gallons, and supply of electric energy at reasonable At a meeting of the Industries and Commerce Sub-Committee of the Mysore District Committee, presided over by the Chairman of this Committee, the order of Government was carefully considered by some of the leading citizens of Mysore and a private Syndicate was formed to take over the factory. The Syndicate stipulated that in addition to the concessions promised by Government the expert advice of the Industries and Commerce Department should be made available to them and that Government should agree to pay them the cost of any improvements they may have to effect in the factory, if they should relinquish the factory at the end of three years. This was agreed to by Government in their order dated the 7th November 1913. Before the Syndicate could take charge of the factory they were led to believe that the existing machinery was unsuitable and a larger outlay of capital was required to make the factory pay than they had at first considered necessary. They requested the Director of Industries to obtain expert advice for them in the matter. Another applicant Mr. Sivanautham Pillai, however, offered to take charge of the factory as it stood under the conditions that Government had sanctioned to the local Syndicate. Government, in the meanwhile, obtained the services of Mr. Fern, clay expert of the School of Art, Bombay, to report on the commercial value of the clays in Mysore. He confirmed in full all the fears of the Syndicate as regards the inutility of the machinery at the Tile Factory and suggested that an expenditure of Rs. 30,000 was required before the factory can be made to pay.

At a meeting held on the 16th March 1914 the Syndicate undertook to raise the sum of Rs. 30,000 reported to be necessary to equip the Tile Factory in a suitable manner, provided that Government obtained for them the services of an expert in tile making, free of charge for a period of three years. The Committee at their last meeting decided to await the report of Mr. Fern who had examined various specimens of clays found in Mysore and also inspected the tile factories now working in the State, on the general question of the development of the Tile Industry as a whole before making specific recommendations as regards the Mysore Tile Factory.

In his report that has since been received Mr. Fern takes a hopeful view of the prospects of the Tile Industry in Mysore. He says "there is an abundance of red burning clays suitable for roofing and flooring tiles in almost every district of the Mysore State............Judging from the quality and quantity of Mysore clays, there is absolutely no reason why the Tile Industry should not flourish." Mr. Fern has prepared plans and estimates for three model tile factories with outturn varying from 1,000 to 3,000 tiles a day and costing from Rs. 22,750 to 47,500 to set up. In the matter of restoring the Mysore tile factory, utilising the majority of the buildings and a part of the machinery, to an efficient condition with an outturn of 3,000 to 5,000 tiles a day, Mr. Fern submits an alternative estimate one for Rs. 57,000 with three round kilns and another for Rs. 67,400 making provision for a continuous kiln.

2. The Manufacture of Matches.

Eight specimens of Mysore wood were sent to Messrs. Nilajkar and Khatao of Belgum for test and report on their suitability for match manufacture. It was found by them that only two specimens, Buchanania Latifolia, and Vateria Indica were suitable for match making. But apart from the fact that Vateria Indica (Dhupa) was far too valuable to be used as match wood, the Conservator of Forests was of opinion that it was impossible to supply from these two varieties alone, 65,000 cubic feet of wood which is the quantity required for an up to date match factory.

Meanwhile enquiries were made regarding the state of the industry in other parts of India, and the Secretary submitted a note containing detailed information in the matter, and a set of questions requesting information on the annual supply of selected species of woods together with the cost at which they could be delivered at the factory site was forwarded to the Conservator of Forests. The Conservator in his reply stated that wood suitable for matches cannot be delivered for less than 10 annual partial properties. The Committee decided that before giving up the idea of match manufacture in Mysore, the Conservator may be requested to select a compact area of 50 square miles that contained the most plentiful supply of wood suitable for matches, so that detailed investigations of the wood supply of such an area might be undertaken by Forest officers specially deputed for the purpose. The Conservator selected some forest blocks in the State forests in response to this request. Meanwhile at the instance of the Committee, Government in their order No. G. 6120/ G.M. 67-13-181 dated the 9th February 191+ appointed Mr. G. C. Evance, a match expert, to investigate the timber resources of three forest areas for purposes of match manufacture and submit a detailed report regarding the quantity of wood available, cost of extraction, etc., with estimates for a match factory, should an adequate supply of wood be found. Mr. Krishnamurti

Naidu, Assistant Forest Conservator, was also directed to inspect the forests in company with Mr. Evance. The reports from both these gentleman have been received. Both consider that the forests in the Shimoga district can supply, at least 100,000 cubic feet of wood per annum at a cost varying from 5½ to 7 annas per cubic foot. Regarding their quality Mr. Evance considers that many of the woods he found in the ever-green forests of Shimoga are to all appearance, much superior to the aspen which is used in Europe. This opinion would appear to be confirmed by the Belgaum Match Factory who have the following remarks to offer on the woods sent to them for test under Mr. Evance's direction: "We are glad to let you know that we find many of them suitable for match manufacture. Two samples out of those tested already have given an article quite equal to the foreign Swedish material. We never expected that such wood could have been found in India."

Messrs. Nilajkar and Khatao, Managing Agents of the Belgaum Match Factory have tested sixty samples of wood sent to them and forwarded their report along with specimens of splints and veneers cut from these samples. They report that exclusive of one sample that was sent without the bark and could not well be examined, 39 varieties of wood are suitable for both splints and boxes, 7 suited for boxes only, 2 for splints only and eleven unsuitable for either boxes or splints.

Mr. Evance has also furnished detailed estimates for the manufacture of 1,500 gross of matches per day from an annual supply of 100,000 cubic feet of wood. Assuming a rate of 6 annas per cubic foot for wood supplied he estimates that a factory started with a paid up capital of + lakhs of rupees would yield a return of 25 per cent. per annum on a selling price of 12 annas per gross of matches made.

Mr. Evance has himself offered to start a match factory at Shimoga if certain concessions are granted to him among which are included, the free grant of a site of 50 acres for site of factory and an annual supply of 100,000 cubic feet of suitable wood at 5½ annas per cubic foot.

3. The Manufacture of Soap and Candles from Dhupa.

The Committee have made some investigations as regards the economic value of Dhupa seed with the help of the Indian Institute of Science to whom the best thanks of the Committee are due for the experiments conducted on dhupa fat and the very instructive reports forwarded by Dr. Travers and Professor Watson. Two samples of seeds, one from the Kadur district and another from Shimoga were forwarded to the Institute of Science. The sample from Shimoga was found to be economically valueless containing only 0'3 per cent. of fat, while the seeds from the Kadur District contained fat equivalent to 7'7 per cent of the total weight or 24'5 per cent of the weight of the kernel. The fat on saponification yielded a good soap and the pressed fatty acids, melting at 141° F, were reported to be suitable for candles. Specimens of soap and candle made of dhupa fat were also forwarded for the inspection of the Committee. These experiments although very valuable by way of demonstrating the possibility of making soaps and candles from dhupa are not sufficient to afford a reliable basis of the percentage of yield of fat from dhupa and the season was past before fresh consignment of seed could be obtained. The committee have arranged to obtain consignment of seed during the next season at several stages of growth for experiments at the Institute of Science, as there is some reason to believe that the fat content of seed varies at different periods of its maturity. Meanwhile, the Conservator of Forests has undertaken to furnish statistics of the approximate number of fruit bearing trees in the Shimoga and Kadur forests.

The Committee considered two applications for a 30 years' lease of the dhupa seed growing in Mysore one from the "Eastern Development Corporation" and another from the "Mysore Economic Union" forwarded to them for opinion by Government. The Committee advised that no action may be taken by way of disposing of the right to collect the seeds until next year when they would be in a better position to estimate their real economic value.

4. Manufacture of Paper.

The Economic Conference of the last Birthday Session passed the following resolution:—•

"This Conference is of opinion that the services of the best available expert should be secured as early as possible to advise on the question of establishing a large and up to date paper mill in the Mysore State and request that the Industrial Committee will be good enough to take action in that direction and after considering the report of such expert and consulting capitalists in and outside the State, submit definite proposals on the subject at the earliest possible date."

Before the resolution was passed, the Committee had already recommended at the instance of Mr. Muttannah, the employment of Mr. Kariappa who was reported to have worked in a paper mill in Travancore to investigate and report on the extent of the forest resources for the manufacture of paper.

On the advice of the Conservator of Forests, the Committee considered that there was no prospect of paper pulp being made out of bamboo in Mysore within the next ten or twelve years, as the bamboo in Mysore had commenced to flower two or three years ago and would all have rotted before a pulp mill to deal with it can be established. The Conservator has however been requested to select a few sites where pulp mills can be located after a new growth of bamboos has come up.

As the completion of the Kannamboli reservoir is likely to bring a large concentrated area under sugarcane the Committee have made arrangements with the Deccan Paper Mills, Poona to have the value of the begasse for paper pulp tested. The Director of Industries has been requested to send 5,000 lbs., of begasse to Poona. But the Committee are not hopeful about this material as the available literature on the subject offers no encouragement.

The present condition of the paper industry in India indicated in a note prepared by the Secretary does not appear to be very encouraging. The chief raw material on which mills in India rely, viz., bhabhar grass, has to be brought to the mills from continually increasing distances; so it is impossible to make locally the common paper for which there is a growing demand and superior paper can only be turned out at such a cost that it is more advantageous to import them from Europe.

It is therefore necessary that some more suitable raw material such as Bamboo, or savannah grass that has a capacity of a sustained annual yield without involving an increasing cost of money or labour has to be utilised before the paper industry can be established on a satisfactory footing. The only chance of introducing the paper industry in Mysore depends on our supply of this raw material in sufficient quantity in localities possessing the necessary facilities for transport. The Committee entertained an idea of engaging the services of Mr. Raitt to undertake the necessary investigation.

They have, however, finally decided to obtain a report from the Forest Department of the raw material available for paper before engaging the services of an expert. Mr. Mittunah has been requested to intimate the lowest cost at which he will be able to deliver 15,000 tons of humboo at any place communiting transport facilities and suitable for the establishment of a pulp mill.

5. Glass Industry.

A note on the glass industry at Tovinkere was read by Mr. P. S. Govinda Rao before the Tumkur District Committee. With a view to obtain expert advice as to the practicability of improving this industry which is in a declining condition a copy of the note as well as the raw materials used in glass making together with samples of crude glass and bangles were sent to Pandit Har-Dyal, the glass expert of the Ambala glass Works. In his report he says that the sample of soda used is very impure and imported soda ash will have to be used if pure glass is to be made. He suggests the construction of two furnaces, one gas-fired and another direct-fired for demonstrative purposes to give instructions to bangle makers in improved methods of manufacture and the establishment of a store for sale at cost price of mixtures of various materials for making glasses of different colors.

Meanwhile, Mr. Shafi, a Glass expert, has applied to the Committee for permission to investigate into the condition of the glass industry in the State.

6. The Metal Industry.

Mr. Subbusamier prepared a note on the condition of the metal industry in the State. He suggested the formation of a co-operative society at Nagamangala with a view to improve the financial conditions of the artisans who were turning out excellent art metal work. He recommended that a loan of Rs. 2,000 may be given to the society to enable it to purchase sheet metal and distribute it to the members, the loan being gralually repaid from the profits realised on sale of art metal work. The Registrar of Co-operative Societies has been requested to report on the practicability of this proposal. Mr. Chatterton has in the meanwhile undertaken to place some orders with these metal workers to see if a wider market could be created for the class of work turned out by them. Meanwhile at the instance of Mr. Chatterton, Government have been requested to open a metal work class in the Chamrajendra Technical Institute.

7. Plantain Fibre.

The utility of plantain fibre for rope making was reported upon by the Director of Industries and the Economic Botanist and the information obtained in the matter has been published for the

information of the public. Both of them consider that the yield of fibre from the edible plantains isvery small and that the extraction of fibre could only be carried on as a home industry. In placeswhere plantain gardens abound, a rope factory may possibly be started to deal with fibre extracted in the gardens.

8. Cement Manufacture.

A note by Mr. D'cruz on the advisability of starting cement works in Mysore was considered. Both the Chief Engineer who was consulted on the matter and the Director of Industries considered that as the ordinary lime available in Mysore was sufficiently hydraulic it was unlikely that cement will be used in place of "Surki mortar" in sufficiently large quantities as to encourage the establishment of cement works.

9. Coir-Making.

At the instance of the Tumkur District Committee, the Committee have taken steps to ascertain the value of cocoanut fibre for purposes of coir. After communicating with the Head Master School of Commerce, Calicut, the Committee engaged the services of Mohideen Koya an expert coir workman who visited important centres in the Tumkur and Hassan Districts.

The Hassan District Committee are of opinion that a great deal of cocoanut fibre is manufactured out of green nuts in places where water facilities are available in the district and desire the services of an expert who would teach them coir matting and more lucrative methods of utilising the fibre than are prevalent for the present in the district. The Headmaster of the School of Commerce has been requested to recommend a suitable person. Meanwhile Mr. Koya has been placed under the orders of the Deputy Commissioner, Bangalore and is making experiments on the cocoanut husk available at Chennapatna.

10. Mat Making.

The Mysore District Committee requested the engagement of an expert to train the mat makers of Kadakola. Samples of reeds used in Palghat were obtained for the inspection of the District Committees and the reeds utilised at Kadakola were also sent to Palghat, The Tahsildar of Palghat was unable to induce any mat maker to go to Mysore but offered to get our local men trained there if they were sent from Mysore. This information was communicated to the District Committee.

11. Porcelain.

At the last session of the Conference the following resolution was passed. "That investigations be undertaken to ascertain the possibilities of establising a porcelain factory on modern lines within the Mysore State and that a report on the subject be submitted to the Conference by the Industries and Commerce Committee at the next session of the Conference."

In pursuance of this resolution, Mr. E. R. Fern, clay expert at the School of Art, Bombay was appointed to investigate into the nature of clays available in Mysore and submit a detailed report. Samples of clays available here were sent to him for test at his laboratory at Bombay. He has also recently inspected the clay fields and tile factories in the State.

He reports as follows:—"As far as I was able to ascertain during my visit to Mysore State, there are no plastic or ball clays which burn white. It is therefore neither possible to manufacture white earthenware nor the soft paste porcelain. There is an abundance of raw materials for hard paste porcelain but as this industry requires highly skilled labour for manipulating I do not think it would be commercially successful at present but if a class of men be trained for the manufacture of porcelain in your industrial school for about four years you will then have the nucleus of a class of porcelain workmen."

Arrangements are also being made to send samples of clays to be tested at the Pottery. Works, Calcutta.

12. Carpet Making.

Mr. Munikrishniah, Wool Agent, Binny's Mills applied for a grant of 10 scholarships of Rs. 5 per mensem to enable him to train some young men in the factory he proposes to establish on the Wysore Road.

As it was reported that the industry in handwoven carpets cannot afford to pay more than 4, annas a day as wages for labour, inquiries are being made as to the rate at which wages are calculated at the Central Jail, the School of Art, Madras and the Anjuman.

13. Rules for Industrial Investigation.

At the instance of Mr. •Chakravarti, certain rules have been issued to afford facilities for Industrial Investigation in Mysore to experts with a view to attract the talent of willing and capable workers, in the development of local industries. Mr. Luber, a former manager of pencil works in England who applied under these rules has been given permission to investigate the prospects of the pencil industry in Mysore. As referred to already, Mr. Shafi, a Superintendent Alwar Glass works has applied for permission to investigate the glass industry.

Collecting and Spreading of Information.

I. Conference Library and Reading Room.

The Sub-Committee appointed for the selection of books recommended the purchase of a number of books and Parliamentary publications and also formulated certain propositions providing for the gradual enlargement of the Library on a definite basis. 469 volumes were newly added to the Library during the year at a cost of Rs. 821-11-0. The total number of volumes in the Library is 1056 and have cost Rs. 4103-11-6.

II. Publications of Bulletins and Leaflets.

The following bulletins were issued by the Committee during the course of the current official year:—

- 1. Rice hulling.
- 2. Sugar Industry.
- 3. Feeder Railways and motor transport.
- 4. Statistical information regarding the trade of Mysore 1911-12.
- 5. The generation of Power in Mysore.
- 6. The Sreekrishna Weaving Factory.
- 7. Joint Stock Companies. (Canarese).
- 8. Sisal Hemp.
- 9. Passenger Traffic.
- 10. Cotton seed products.
- 11. Glass industry at Tovinkere.

Canarese translations of all these bulletins excepting "Joint Stock Companies" which is written in Canarese have been issued. Arrangements have also been made to issue monthly from January 1914 extracts from recent commercial and industrial literature on topics that are likely to be of practical interest in the near future. With a view to enable gentlemen, other than those associated with the Central and District Committees, interested in industrial matters to obtain copies of publications issued by this Committee, a notice has been published in the Gazette of the names of bulletins available for distribution.

III. Statistics.

The Statistical Sub-Committee met and considered the statistical publications already published. As regards the drain in the annual production of wealth that was commented upon by Mr. Chatterton in his decennial review of the external trade, the Sub-Committee expressed a doubt that the annual exports are so much in excess of the imports having reference to the fact that the data necessary for a correct calculation does not exist. They, however, agreed that Mysore was paying for services which she could well render to herself.

The Committee have decided on the recommendation of the Sub-Committee to issue a statistical abstract giving information of Mysore conditions on the lines of the statistical abstract for British India for one year and to obtain and publish statistics of production from industrial concerns in work under a promise of secrecy as regards the details regarding individual establishments. They propose to obtain some information as regards the extent of external trade by road from the toll gates on the frontier roads by supplying them with printed forms for being filled up.

IV. Industrial Museum.

The Committee have been asked to prepare a detailed scheme as regards an industrial museum and have requested Messrs. Chatterton and N. S. Subba Rao to prepare notes on Industrial Museums in Europe. Meanwhile the Committee have under consideration a proposition to develop a permanent museum out of the nucleus afforded by the Dasara Exhibition.

Miscellaneous.

Prevention of Street Begging.

A note on the above and a draft regulation prohibiting street begging by able bodied persons by Mr. R. T. Mahadeva Rao have been submitted to Government for consideration by them in the Legislative Department.

M! KANTARAJ URS.

Chairman.

C. RANGANATHA RAO SAHIB,

Secretary, Industries and Commerce Committee.

APPENDIX A. PROGRAMME for 1914—15.

No.	Schemes under operation	No.	Schemes under preparation and investigation	No.	Collecting and spreading of information
1	The Manufacture of cotton seed oil.	1	Utilisation of Dhupa for soap and candle manufacture.	1	Publication of bulletins and extracts.
2	Development of the Tile Industry	2	Manufacture of paper.	2	Preparation of a statistical ab-
3	The organisation of a Sisal	3	Coir Industry.		stract.
	Hemp Plantation.		Manufacture of porcelainware.	3	Compilation of returns furnished by industrial concerns.
4	Development of the sandalwood carving industry.	5	Date jaggery.	4	Enquiries as regards the Exter-
5	Development of the carpet making Industry.	6	Pisciculture.	5	nal Trade by road. Organisation of an Industrial
		• 7	Manufacture of umbrellas.	3	Museum.
6	Organisation of weaving demonstration parties.	8	The manufacture of matches.	6	Institution of lectures on in-
7	Manufacture of charcoal as a	9	Manufacture of pencils.	_	
	preliminary to the establishment of a wood distillation plant.	10	Introduction of improved me- thods in the manufacture of	7	Collection of information regarding watch and clock making.
8	Manufacture of bone manure.		bangles.	8	
9	Development of metal work.	. 11	Development of Motor Transport.		conferences.
10	Pharmaceutical chemicals.	12	Home industries and subsidiary occupations,		i
		13	Improvements in mat making.		,
	:	14	An additional cotton mill at Bangalore.		
		15	Any other subjects that the Committee may be required to investigate,		

APPENDIX-B.

Programme of work of District Committee for the year 1914-15 Industries and Commerce.

BANGALORE DISTRICT.

	Schemes under operation.	Schemes under preparation and investigation.	Collection and Spreading of information.
1.	Co-operation in the introduction of improved methods in hand loom weaving.	Establishing a factory for the crushing of bones and manufacture of bone manure.	
2.	Co-operation in the introduction of improved machinery for oil pressing rice hulling, flour milling and lifting water.		riddstries.
3.	Co-operation in the development of mat making, rug making and carpet making.		

		KC	DLAR DISTRICT.	
1.	Establishment of sugarcane crushing plants at Manchenhalli and other centres of sugar cane cultivation.	1.	Brick and tile manufacture. Improvement of irrigation facilities.	Collection of statistics regarding Handloom weaving in the District.
2.3.	Introduction of fly shuttle looms. Improvement of glass bangle industry in Bagepalli Taluk,	3.	Improvement of rural industries. Investigation regarding the	
4.	Bleaching and weaving of silk.		iron ore available in Bage- palli and Goribidnur Taluks.	
		MY	SORE DISTRICT.	
1. 2. 3. 4. 5. 6. 7. 8.	Development of handloom industry, by the introduction of improved methods in handloom weaving. Establishment of an oil factory at Mysore. Establishment of a Tile Factory at Mysore. Establishment of Rice Mills. Establishment of Lift Pumps. Establishment of old industries such as matmaking and ropemaking. Establishment of sugarcane crushing plants. Training of local artisans in reeling silk and in twisting yarn.	1.	Improvements of Art Metal work. Creation of Artisan's Cooperative Societies and Assistance to Artisans.	Collection and publication of accurate statistical data on trade and commerce through the agency of the Mysore Mercantile Association which will be started in the near future.

APPENDIX B-continued.

HASSAN DISTRICT.

Schemes under operation.		Schemes under preparation and investigation.		Collection and Spreading of information.		
1. 2.		2. 3. 4. 5. 6. 7. 8. 9.	at Alur for teaching the Art of Engraving, Cutlery, etc. Starting Coir Industry at some convenient centres in the District. Establishing a Tile Factory at Hassan. Starting a Weaving School at Basavapatna. Installation of combined rice huller and saw mill at Holenarasipur. Establishing a rice huller at Hassan.	3.	Collecting statistics regarding the starting of Bead Industry. Collecting statistics regarding the making of charcoal. Collecting information regarding the possibilities of establishing a Cotton Seed Oil Factory at Arsikere.	
 1	Fraining the Mahratta Kunbis in improved rattan work.		MOGA DISTRICT. Giving training to gudigars in improved methods of designing, joining, etc.		Collection and spreading of information regarding machinery for ex	
		2.			traction of fixed oils hulling rice, and crush ing sugarcane.	

Investigation of the possibilities for the establishment of a wood distillation plant for purposes of manufacturing charcoal and the

obtaining of valuable bye-

products.

of statistics relating to the trade of the District in the following:— (1) Arecanut (2) Sugar-

cane (3) Paddy (4) Timber (5)Cotton and (6) Cattle,

APPENDIX B-continued.

KADUR DISTRICT.

	Schemes under operation.			der preparation and stigation.		llection and Spreading of information.
1. <i>2</i> . 3.	Establishing a Tile Factory. Establishing a Saw Mill. Affording facilities to the Tannery opened near Kadur.	1. 2. 3. 5. 6. 7. 8. 9. 10. 11.	factory a Banawar. Improving forest production leather buckets or where iron	on of Chrome buckets for well trunks to kavalais a buckets are used. g a Saw Mill. an Oil Mill. a Sugarcane Mill. a Bone Crusher. a Coffee poeler and huller. Model Forest Villages. a Rice-hulling Machine. Manufacture of Soap and candle.	. 2.	The distribution of bulletins, etc., received from the Central Committees to Members and Associates. Itinerant lectureships.

CHITALDRUG DISTRICT.

1. Establishment of a Pumping Station on the Vedavati River in the neighbourhood of Parasurampur.

establishing a factory.

furniture making.

Encouraging carpentry and

- 2. Encouragement of Pumping installations.
- 3. Popularising the use of chrome leather for well buckets.
- +. Enquiry into the condition of brass and bell metal industry which once flourished in the Hosadrug Taluk.
- . Collection of wool trade statistics and to ascertain what steps are necessary and feasible to improve the supply of raw material.
- Collection of trade and commerce statistics by opening trade registration stations at convenient centres.

APPENDIX B-continued.

TUMKUR DISTRICT.

	Schemes under operation.	Schemes under preparation and Investigation.	Collecting and Spreading of information.
1.	Extention of the Agricultural and Industrial Museum to every Taluk Head quarter.	Further investigation of Glass manufacture in carried on at Tovinkere the Kortagere Sub-Taluk.	ow regarding the following subjects and under the
2.	Improving weaving industry in the District.	2. Further investigation of	
3.	Demonstration of improved implements to the rvots by	improvement of the Br industry at Sithakal and surrounding villages.	ass Weaving.
4.	special agency of experts. Developing the work of the	3. Further investigation of establishment of the Dist	weaving industry is the carried on.
	District Agricultural and Industrial Association.	Board Railway.	2. No. of looms at each place.
5.	Further expansion of the scheme of village improvement.	 Further investigation of c industry. 	3. Amount of yarn purchased by the weavers.
		 Further investigation of question of woollen manuf ture in Chiknaikanahalli a Pavugada Taluks. 	ac- 4. The cost of cloth ma-
		6. Popularising cheap wa pumps for lifting water.	tter 5. The margin of profit derived by the weavers for each loom.
		7. Popularising chrome leat buckets.	
		8. Investigating into	the Carpentry.
	•	question of finding empl ment for Madigars in tann and leather work.	oy- 1. Names of villages
		9. Demonstration of impromethods of weaving.	ved 2. No. of workshops.
		methods of weaving.	3. No. of men employed in the business.
			4. Nature of articles turned out in the workshop.
			5. The amount of profit derived by each man from the industry etc.
		·	3. Smithy and 4. Pottery. Information of a description similar to 2 i. c., Carpentry.
			Oil Milling.
			1. No. and Nature of mills employed.
			2. Nature of work done.
		•	3. Amount of prefit realised for each mill.
			. 6. Gunny cloth weaving.
		•	1. Names of villages where this industry is carried on.
			2. No. of men employed in the business.

3. Amount of profit realised.

APPENDIX C.

Rules regarding facilities afforded for industrial investigations in the Mysore State.

- 1. Any person with necessary qualifications may apply for investigating the possibilities of a new industry or of development of an existing industry in the Mysore State. Such application should be sent to Secretary, Industries and Commerce Committee, Mysore Economic Conference, High Ground, Bangalore, and should be accompanied by copies of documents showing the applicant's fitness for the work proposed.
- 2. Such application will be considered by the Industries and Commerce Committee within a period of two months and a suitable reply sent to the applicant. If the Committee consider the application favourably the applicant will be requested to come to Bangalore.
- 3. On arrival in Bangalore and producing his original certificates, etc., before the Secretary, Industries and Commerce Committee, the applicant will receive the value of a return ticket by rail or steamer from the capital city of the State, Province or Presidency from which he comes and daily allowance for 15 days. The class of ticket and rate of allowance will be decided by the Committee in each case and intimated to him beforehand.
- 4. The Secretary of the Industries and Commerce Committee will introduce the applicant to the Director of Industries and the Chairman of the Industries and Commerce Committee to whom the applicant will briefly explain the nature of investigation he proposes to undertake.
- 5. Within a fortnight of his arrival in Bangalore the applicant should submit a preliminary report of the investigation proposed by him. The report should take full cognizance of local conditions and state the time required, the expenditure involved, the taluks proposed to be visited, etc. During the preparation of this report the Secretary, Industries and Commerce Committee should give the applicant all necessary help and advice.
- 6. The preliminary report referred to in the preceding clause will be considered by the Committee or, if there be no Committee meeting at a convenient date, by the Chairman in consultation with the Director of Industries and the result communicated to the applicant as early as practicable. If the investigation suggested by the applicant is not to be undertaken, daily allowance at the previous rate will be paid to him up to the date of communication of such order.
- 7. If the investigations suggested by the applicant are ordered to be carried out, the terms will be definitely settled and communicated to him. In this case also he will receive daily allowance from the date of submission by him of the preliminary report to the date of receipt of communication ordering detailed investigation.
- 8. The investigator will submit weekly progress reports to the Secretary to the Committee and should submit his full report within the specified period. The report should include estimates, plans, etc., required for starting the industry.
- 9. The report will be considered by the Committee as early as practicable. If there is no chance of keeping the investigator profitably employed during the period the report is under consideration, he will be sent away on the submission of the report.
- 10. If the report in the opinion of the Committee indicate the possibility of a successful industry, the investigator will be allowed to bring the necessary capital if he can command it and start the business with suitable concessions under sanction of Government.
- 11. If the investigator cannot command capital he will be, if he wants, given all facilities and help for canvassing and securing capital locally if such a course is possible, the State furnishing a part of the capital if considered desirable by Government.
- 12. If the business is started the investigator will be given preference for being employed as the organiser, Manager, technical adviser or in some other profitable capacity on suitable terms.
- 13. If there is no immediate prospect of the business being started the report, plans, etc., will be retained by the Committee and a suitable fee will be paid to the investigator if considered necessary.
- 14. Nothing in these rules should be taken as implying any obligation on the part of the Industries and Commerce Committee. In all cases of difference of opinion, the vote of the Committee or the orders of the Chairman will finally decide the question.